

- (b) coordinated to a master timing clock administered by said Principal Application Specific Integrated Circuit Central Processing Unit.
  - (c) optimally located to maximize said Likelihood of Accuracy, which consists of placing the Surface Detection Units
    - i. where the geometrically connected unit positions form a convex hull.
    - ii. in such a way that the convex hull should cover as much of the possible target locations as possible.
    - iii. in such a way that no three units are collinear.
    - iv. so that no two units have the same  $x$ -value or  $y$ -value, as viewed in a coordinate grid.
    - v. to maximize the likelihood that  $d_i > |f_i|c$ , for all  $i$ , as the terms are defined in Claim 1(a).
7. A method of Claim 1, wherein said step of calculating said Target Position Report is
- (a) performed on one set of incoming data before another set of said incoming data is processed, that is, the calculations are performed in real time.
  - (b) self-monitoring as to accuracy.
  - (c) self-adjusting as to accuracy.
  - (d) likelihood-based as to accuracy.
  - (e) error bounded, in that said Likelihood of Accuracy may be made arbitrarily large by adjusting the characteristics of said set of Surface Detection Units.
8. A method of Claim 1, wherein
- (a) said Target Position Reports may be calculated arbitrarily frequently.
  - (b) said step of Claim 5(c) of using containment policies to maximize said Likelihood of Accuracy is implemented analytically in said Principal Application Specific Integrated Circuit Central Processing Unit.
  - (c) said step of Claim 6(c) of optimally locating said Surface Detection Units to maximize said Likelihood of Accuracy is implemented analytically in said Principal Application Specific Integrated Circuit Central Processing Unit.

## 6 Abstract of Disclosure

A set of analytical methods and a processing system to produce, in real time, an error- bounded, self-monitoring and self-adjusting, likelihood-based Target Position Report for arbitrarily many self-identifying targets in a two-dimensional

grid. Each target sends identifying information to an array of sensors strategically placed in its vicinity to maximize the likelihood that the system will produce a position report as accurately and precisely as possible.

## **7 Figures**

The following two figures were described in the Brief Description of Drawings section.